

baby boomers, wishing to conserve leisure time by contracting out for basic yard services, spurred employment growth in landscaping and lawn service occupations. Homeowners are expected to continue using such services to maintain the beauty and value of their property. As the “echo” boom generation (children of baby boomers) comes of age, the demand for parks, athletic fields, and recreational facilities also can be expected to add to the demand for landscaping, groundskeeping, and lawn service workers. The need for nursery and greenhouse laborers and managers will grow because of the continued popularity of home gardening, as well as the need to cultivate and provide the vegetation used by landscaping services.

Job opportunities for nonseasonal work are more numerous in regions with temperate climates where landscaping and lawn services are required all year. However, opportunities may vary depending on local economic conditions.

Earnings

Earnings vary widely depending on the particular landscaping position and experience, ranging from the minimum wage in some beginning laborer positions to more than \$20.00 an hour in some manager jobs. The following tabulation presents 1998 median hourly earnings for landscaping, groundskeeping, nursery, greenhouse, and lawn service occupations:

Lawn service managers .....	\$12.22
Nursery and greenhouse managers .....	12.19
Pruners .....	10.61
Sprayers and applicators .....	10.41
Landscaping and groundskeeping laborers .....	8.24

Median hourly earnings in the industries employing the largest numbers of landscaping and groundskeeping laborers in 1997 are shown below:

Concrete work .....	\$10.40
Local government, except education and hospitals .....	10.00
Real estate operators and lessors .....	7.70
Landscape and horticultural services .....	7.70
Miscellaneous amusement and recreation services .....	7.50

Related Occupations

Landscaping, groundskeeping, nursery, greenhouse, and lawn service workers perform most of their work outdoors and have some knowledge of plants and soils. Others whose jobs may be performed outdoors and are otherwise related are botanists, construction workers, landscape architects, farmers, horticultural workers, tree surgeon helpers, forest conservation workers, and soil conservation technicians.

Sources of Additional Information

- For career and certification information, contact:
- ☛ Associated Landscape Contractors of America, Inc., 150 Elden Street, Suite 270, Herndon, VA 20170.
  - ☛ Professional Grounds Management Society, 120 Cockeysville Rd., Suite 104, Hunt Valley, MD 21030.

Pest Controllers

(O\*NET 67008)

Significant Points

- Federal and State laws require licensure through training and examination.
- Because many people do not find pest control work appealing, those with the necessary skills and interests should have favorable job prospects.

Nature of the Work

Roaches, rats, mice, spiders, termites, fleas, ants, and bees—few people welcome them into their homes or offices. Unwanted creatures that infest households, buildings, or surrounding areas are pests that can pose serious risk to human health and safety. It is a pest controller’s job to control them.

Pest controllers locate, identify, destroy, and repel pests. They use their knowledge of pests’ lifestyles and habits, along with an arsenal of pest management techniques—applying chemicals, setting traps, operating equipment, and even modifying structures—to alleviate pest problems.

The best known method of pest control is pesticide application. Pest controllers use two different types of pesticides—general use and restricted use. General use pesticides are the most widely used and are readily available; in diluted concentrations, they are available to the public. Restricted use pesticides are available only to certified professionals for controlling the most severe infestations. Their registration, labeling, and application are regulated by Federal law, interpreted by the Environmental Protection Agency (EPA), because of their potential harm to pest controllers, customers, and the environment.

Pesticides are not pest controllers’ only tool, however. Pest controllers increasingly use a combination of pest management techniques, known as integrated pest management. One method involves using proper sanitation and creating physical barriers, for pests cannot survive without food and will not infest a building if they cannot enter it. Another method involves using baits, some of which destroy the pests and others that prevent them from reproducing. Yet another method involves using mechanical devices, such as traps and tools, that electrocute, freeze, or burn pests.

Integrated pest management is becoming popular for several reasons. First, pesticides can pose environmental and health risks. Second, some pests are becoming more resistant to pesticides in certain situations. Finally, an integrated pest management plan is more effective in the long term than use of a pesticide alone.

Most pest controllers perform duties for one of three positions—pest control technician, applicator, or supervisor. Position titles vary by State, but the hierarchy—based on training and responsibility required—remains consistent.

*Pest control service technicians* identify problem areas and operate and maintain traps. They assist applicators by carrying supplies, organizing materials, and preparing equipment. In addition, they may make sales presentations on pest control products or services.. Technicians are licensed to apply pesticides only under an applicator’s supervision.

*Certified pest control applicators*, sometimes called exterminators, perform the same tasks technicians do. But they are also certified to apply all pesticides, both general and restricted use, without supervision and are licensed to supervise and train technicians in pesticide use. Within this group of workers are several subspecialties, including termite exterminators and fumigators.

Termite exterminators are applicators who specialize in controlling termites. They use chemicals and modify structures to eliminate and prevent termites. To treat infested areas, termite exterminators drill holes and cut openings into buildings to access infestations. To prevent further infestation, they modify foundations and dig holes and trenches around buildings. Some termite exterminators even repair structural damage caused by termites.

Fumigators are applicators who control pests using poisonous gases called fumigants. Fumigators pretreat infested buildings by examining, measuring, and sealing the buildings. Then, using cylinders, hoses, and valves, they fill structures with the proper amount and concentration of fumigant. They also monitor the premises during treatment for leaking gas. To prevent accidental fumigant exposure, fumigators padlock doors and post warning signs.

*Pest control supervisors*, also known as operators, direct service technicians and certified applicators. Supervisors are licensed to apply pesticides, but they usually are more involved in running the business. Supervisors are responsible for ensuring employee adherence to rules and must resolve problems with regulatory officials. Most States



*Pest controllers follow strict safety guidelines when working with pesticides.*

require each pest control establishment to have a supervisor; self-employed business owners are usually supervisors.

### **Working Conditions**

Pest controllers must kneel, bend, reach, and crawl to inspect, modify, and treat structures. They work both indoors and out, in all weather conditions. During warm weather, applicators may be uncomfortable wearing the heavy protective gear—such as respirators, gloves, and goggles—required for working with pesticides.

Almost half of all pest controllers work 40-hour weeks, but about a quarter work more hours. Pest controllers often work evenings and weekends, but about 90 percent of them work consistent shifts.

There are health risks associated with pesticide use. Various pest control chemicals are toxic and could pose health risks if not used properly. Extensive training required for certification and the use of recommended protective equipment minimizes these health risks, resulting in fewer reported cases of lost work. Because pest controllers travel to visit clients, the potential risk of motor vehicle accidents is another occupational hazard.

### **Employment**

Pest controllers held about 52,000 jobs in 1998; over 90 percent of salaried workers were employed in the services to buildings industry. They are concentrated in States with warmer climates. In 1997, more than half of all pest controllers worked in California, Florida, Georgia, North Carolina, Tennessee, and Texas. About 14 percent were self-employed.

### **Training, Other Qualifications, and Advancement**

A high school diploma or equivalent is the minimum qualification for most pest controller jobs. Although a college degree is not required, almost one-third of all pest controllers have either attended college or earned a degree.

Pest controllers must have basic skills in math, chemistry, and writing. Because of the extensive interaction pest controllers have with their customers, employers prefer to hire people who have good communication and interpersonal skills. In addition, most pest control companies require their employees to have a good driving record. Pest controllers must be in good health because of the physical demands of the job, and they also must be able to withstand extreme conditions—such as the heat of climbing into an attic in the summertime or the chill of sliding into a crawlspace during winter.

Both Federal and State laws regulate pest controllers. These laws require them to be certified through training and examination, for which most pest control firms help their employees prepare. Workers may receive both formal classroom and on-the-job training, but they must also study on their own. Because the pest control industry is constantly changing, workers must attend continuing education classes to maintain their certification.

Requirements for pest controllers vary by State. Pest controllers usually begin their careers as apprentice technicians. Before performing any pest control services, apprentices must attend general training in pesticide safety and use. In addition, they must train in each pest control category in which they wish to practice. Categories may include general pest control, rodent control, termite control, fumigation, and ornamental and turf control.

Training usually involves spending 10 hours in the classroom and 60 hours on the job for each category. After completing the required training, apprentices can provide supervised pest control services. Apprentices have up to 1 year to prepare for and pass the written examinations. Upon successful completion of the exams, the apprentice becomes licensed as a technician.

To be eligible to become applicators, technicians need 1 year of experience, 6 months of which must be as a licensed technician. This requirement is sometimes waived for individuals who have either a college degree in biological sciences or extensive related work experience. To become certified as applicators, technicians must pass an additional set of category exams. Depending on the State, applicators must attend additional classes every 1 to 6 years to be recertified.

Applicators with several years of experience often become supervisors. To qualify as a pest control supervisor, applicators must pass State-administered exams and have experience in the industry, usually a minimum of 2 years. Many supervisors are self-employed, reflecting the relative ease of entry into the field and the growing need for pest control. Therefore, the pest control industry provides a good opportunity for people interested in operating their own business.

### **Job Outlook**

Many people do not find pest control work appealing, so those with the necessary skills and interests should have favorable prospects. Employment of pest controllers is expected to grow faster than the average for all occupations through 2008. In addition to job openings arising from employment growth, opportunities will arise when controllers transfer to other occupations or leave the labor force.

Demand for pest controllers is projected to increase for a number of reasons. An expanding client base will develop as environmental and health concerns, greater numbers of dual-income households, and improvements in the standard of living convince more people to hire professionals rather than attempt pest control work themselves. In addition, tougher regulations limiting pesticide use will demand more complex integrated pest management strategies. Furthermore, some of the newer materials used for insulation around foundations have made many homes more susceptible to pest infestation. Finally,

continuing population shifts to the more pest-prone sunbelt States should increase the number of households in need of pest control.

### Earnings

The hierarchy of pest controller positions also applies to earnings. Pest control supervisors usually earn the most and technicians the least, with earnings of certified applicators falling somewhere in between. Earnings data do not distinguish among job titles, however.

Median hourly earnings of full-time wage and salary pest controllers in 1998 were \$10.81. The middle 50 percent earned between \$8.80 and \$13.02. The lowest 10 percent earned less than \$6.68, and the top 10 percent earned over \$15.67.

Many pest controllers work under a wage-plus commission system, which rewards workers who do their job well. Some firms offer bonuses to workers who exceed their performance goals.

### Related Occupations

Pest controllers visit homes and places of business to provide building services. Other building services workers include construction equipment and materials salespeople, building cleaning personnel, electricians, carpenters, and heating, air-conditioning, and refrigeration technicians.

### Sources of Additional Information

Private employment agencies and State employment services offices have information about available job opportunities for pest controllers.

For information about the training and certification required in your State, contact your local office of the U.S. Department of Agriculture or your State's Environmental Protection Agency.

For general information about a career in pest control, contact:

☛ National Pest Control Association, 8100 Oak St., Dunn Loring, VA 22027. Internet: <http://www.pestworld.org>

## Food Preparation and Beverage Service Occupations

### Chefs, Cooks, and Other Kitchen Workers

(O\*NET 65021, 65026, 65028, 65032, 65035, 65038A, 65038B, and 69999E)

#### Significant Points

- Many young people work as chefs, cooks, and other kitchen workers—over 20 percent are between 16 and 19 years old.
- About 35 percent work part-time.
- Job openings are expected to be plentiful through 2008, reflecting average growth and substantial turnover in this large occupation.

#### Nature of the Work

A reputation for serving good food is essential to the success of any restaurant or hotel, whether it offers exotic cuisine or hamburgers. Chefs, cooks, and other kitchen workers are largely responsible for establishing and maintaining this reputation. Chefs and cooks do this by preparing meals, while other kitchen workers assist them by cleaning surfaces, peeling vegetable, and performing other duties.

In general, *chefs* and *cooks* measure, mix, and cook ingredients according to recipes. In the course of their work they use a variety of pots, pans, cutlery, and other equipment, including ovens, broilers, grills, slicers, grinders, and blenders. Chefs and cooks are often responsible for directing the work of other kitchen workers, estimating food requirements, and ordering food supplies. Some chefs and cooks also help plan meals and develop menus. Although the terms chef and cook are still used interchangeably, chefs tend to be more highly skilled and better trained than most cooks. Due to their skillful preparation of traditional dishes and refreshing twists in creating new ones, many chefs have earned fame for both themselves and the establishments where they work.

The specific responsibilities of chefs and cooks are determined by a number of factors, including the type of restaurant in which they work. *Institutional chefs and cooks*, for example, work in the kitchens of schools, cafeterias, businesses, hospitals, and other institutions. For each meal, they prepare a large quantity of a limited number of entrees, vegetables, and desserts. *Restaurant chefs and cooks* usually prepare a wider selection of dishes, cooking most orders individually. *Short-order cooks* prepare foods in restaurants and coffee shops that emphasize fast service. They grill and garnish hamburgers, prepare sandwiches, fry eggs, and cook french fries, often working on several orders

at the same time. *Specialty fast-food cooks* prepare a limited selection of menu items in fast-food restaurants. They cook and package batches of food, such as hamburgers and fried chicken, which are prepared to order or kept warm until sold.

*Bread and pastry bakers*, called pastry chefs in some kitchens, produce baked goods for restaurants, institutions, and retail bakery shops. Unlike bakers who work in large, automated industrial bakeries, bread and pastry bakers need only to supply the customers who visit their establishment. They bake small quantities of breads, rolls, pastries, pies, and cakes, doing most of the work by hand. These bakers measure and mix ingredients, shape and bake the dough, and apply fillings and decorations. Some related workers are employed in coffee houses, which may also serve pastries or other snacks. These workers operate specialized equipment such as cappuccino and espresso machines. Some food products are made on the premises, while others are delivered daily.

Other kitchen workers, under the direction of chefs and cooks, perform tasks requiring less skill. They weigh and measure ingredients, go after pots and pans, and stir and strain soups and sauces. These workers also clean, peel, and slice vegetables and fruits and make salads. They may cut and grind meats, poultry, and seafood in preparation for cooking. Their responsibilities also include cleaning work areas, equipment, utensils, dishes, and silverware.

The number and types of workers employed in kitchens depends on the type of establishment. For example, fast-food outlets offer only a few items, which are prepared by fast-food cooks. Small, full-service restaurants offering casual dining often feature a limited number of easy-to-prepare items supplemented by short-order specialties and ready-made desserts. Typically, one cook prepares all the food with the help of a short-order cook and one or two other kitchen workers.

Large eating places tend to have varied menus and employ kitchen workers who prepare much more of the food they serve from scratch. Kitchen staffs often include several chefs and cooks, sometimes called assistant or apprentice chefs and cooks; a bread and pastry baker; and many less-skilled kitchen workers. Each chef or cook usually has a special assignment and often a special job title—vegetable, fry, or sauce cook, for example. Executive chefs coordinate the work of the kitchen staff and often direct the preparation of certain foods. They decide the size of servings, plan menus, and buy food supplies.

### Working Conditions

Many restaurant and institutional kitchens have modern equipment, convenient work areas, and air-conditioning, but many kitchens in older and smaller eating places are not as well equipped. Working conditions depend on the type and quantity of food being prepared and the local laws governing food service operations. Workers usually must withstand the pressure and strain of working in close quarters, standing for hours at a time, lifting heavy pots and kettles, and working